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Chapter

Capital Adequacy Regulation

Aysa Siddika and Razali Haron

Abstract

This chapter aims to provide a concise overview of the capital adequacy regulation, importance of the regulation, and evolution of the capital adequacy regulation. Bank capital executes the significant role of preventing the bank from failure and acts as a buffer against possible losses. Capital adequacy is the least amount of capital a bank has to preserve to execute the business, take advantage of profitable growth opportunities, absorb losses, and sustain the customers' confidence on it. Several bank crises and bank defaults motivate the Basel Committee on Banking Supervision to provide a comprehensive guideline in managing bank capital. The capital adequacy regulation is an international standard to safeguard the banks through setting a risk-sensitive minimum capital requirement. The regulatory authority sets the regulatory capital, and the operating banks are required to maintain the adequate level of capital.

Keywords: capital adequacy regulation, Basel Accord, Basel Committee, regulatory capital, risk-weighted asset

1. Introduction

History of several bank failures evidences how the excessive risk taking can affect the whole economy as well as the global financial scenario. Since bank deals with different kinds of risks, the regulators strive to minimize this risk exposure through different regulations. The key regulations aiming to minimize the risk and bank failure is the capital adequacy regulation. The principle of the capital adequacy regulation is based on the fact that the minimum capital should be high enough to absorb the potential losses. While capital acts as a buffer for the bank, in the distressed period, the higher the buffer, the lower the risk of default. Therefore, the importance of maintenance of adequate level of capital is never overestimated. This chapter will present a brief history of capital adequacy regulation and the evolution of the regulation over time.

2. Basel Committee on Banking Supervision

Bank for International Settlement (BIS), the oldest international financial organization, was founded in 1930. Its members are central banks or the regulatory authorities of 60 countries. The committee aims to serve as a regulatory authority for monetary and financial stability and foster international cooperation.

West Germany's Herstatt Bank closed its operation on June 26, 1974, due to excessive foreign exchange risk that posed counterparty risk in international settlement with the banks in New York. Subsequently, at the end of 1974 due to this

cross-jurisdiction implication, BIS formed "Committee on Banking Regulations and Supervisory Practices" also known as Basel Committee on Banking Supervision (BCBS) headquartered in Basel. Since the inception, the committee has established a series of banking standards to promote monetary and financial stability. Though at the beginning, the group's members were the governor of Central banks of G10 countries, at present, it has 45 institutions from 28 jurisdictions.

BCBS provides assistance to the central banks through regular cooperation to improve the quality of supervision in the banking industry. The committee sets regulations for the central banks. In addition, it acts consistently to enhance the financial stability and level playing field to avoid competitiveness conflicts globally. The member countries implement its prudential regulations and report to the committee periodically. BCBS decisions are expected to be followed by the member countries toward sound practice and standard guidelines in the financial industry [1].

The Committee's members are Argentina, Australia, Belgium, Brazil, Canada, China, European Union, France, Germany, Hong Kong SAR, India, Indonesia, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, Russia, Saudi Arabia, Singapore, South Africa, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States. BCBS performs as a forum for regular cooperation on banking standard, regulation, and supervision issues between the member countries. It provides comprehensive guidelines for managing bank capital to safeguard against operational and financial risk in an international standard. Toward this standardization in banking operation and supervision, the committee has published a number of landmark guidelines on capital adequacy known as Basel I, Basel II, and Basel III.

This guideline advises holding a minimum amount of capital on the risk-weighted assets of the bank. This regulation is called the capital adequacy regulation (CAR) or minimum capital requirement (MCR).

2.1 Regulatory capital and economic capital

Banks as public confidence institution are strictly guided by regulations and supervision by the regulatory authority. Since risk is an integral part of any financial institution, in the process of providing different services to the economy banks come across different types of risk in their operation. As a result, risk is the subject of all regulation bases [2]. Regulators and risk managers define risk as an uncertainty that has adverse effect on the positive outcome of the bank like banks return, asset, or goodwill. Hence, the regulations intend to enhance the resilience of the bank in the stressed situations to protect the interest of the depositors and other associated counterparts of the bank.

In discussion of bank capital, the most widely used terms that come together are regulatory capital and economic capital. Regulatory capital as its name implies is the minimum level of capital required by the regulatory authority. Principally, the regulatory capital should be derived from the maximization of the social welfare function that takes into account the cost and benefit of the capital regulation [3]. Economic capital is the level of capital chosen by the shareholder of the bank. It relates with a desired rating required to safeguard the bank's losses at a certain confidence level. So, if the bank's loss during a period is higher than the initial level of capital, it will be in default. Therefore, the shareholder trades off between the costs of raise or increase of the equity against the benefit of reducing the banks probability of default. Mainly, cost of capital determines the relative position of the economic and regulatory capital. When the cost of capital is low, the economic capital is higher than the level of regulatory capital [3].

While discussing the economic capital and regulatory capital levels, the actual level of capital or actual capital arises. Actual capital is higher than the regulatory

level chosen by the shareholder taking into consideration different regulatory requirements. Threat of closing the undercapitalized bank or avoidance of penalty insists the bank management and shareholders to keep the actual capital level above the minimum requirement.

In this chapter, we will discuss the regulatory capital or the minimum capital requirement (MCR) of the bank.

2.2 Basel I

In 1998, when the world economy faced the economic recession, the Latin American countries could not sustain their debts due to higher interest rates of loans and shorten repayment period [1]. These sovereign defaults possess critical situation for the international banks by eroding the capital buffer and global financial stability. The concern for global financial stability encouraged the BCBS committee to set up an international standard for risk measurement. The committee released a capital measurement system referred to as the "Basel Capital Accord" in July 1988 [4]. The principal of this measurement was to weigh the on-balance sheet and off-balance sheet asset according to the risk they possess. The accord required banks to hold at least 8% of risk-weighted assets (RWA) as capital; 50% of which must be Tier 1 or core capital.

Initially Basel Accord I focused to the credit risk of the bank measured by the Cookie ratio. However, being criticized for exaggerating on the credit risk in 1996, an amendment was issued through incorporating the market risk to address banks' exposure in foreign exchange risk, securities trade, equities, commodities, and options [4]. This amendment permitted the bank to use internal model to measure the market risk and associated capital against this risk.

The first Basel Accord, i.e., Basel I was introduced among the member countries of G-10 which includes Belgium, Canada, France, Germany, Italy, Japan, the Netherlands, Sweden, Switzerland, the United Kingdom, and the United States. The accord was designed to implement among all of the internationally active banks across countries to make a level playing field, i.e., to avoid competitiveness conflicts globally. For large and complex institutions, the regulation becomes less significant. Finally, a more risk-sensitive and comprehensive capital structure guideline—Basel II—was developed.

2.3 Basel II

As a response to Enron scandal and innovation of financial derivatives after the execution of Basel Accord I, a new regulatory framework was imperative to introduce.

A more sensitive new capital requirement known as Basel II was initiated shortly in 2004 to accommodate the highly complex on- and off-balance sheet items, promote more risk sensitive capital requirement through banks own assessment, and provide greater transparency. The purpose of the Basel II accord was to address the risk areas that were not covered by Basel I, to measure the capital requirement above the minimum level.

The Basel II accord released in 2004 was developed on three pillars, which are as follows:

i. Pillar I or minimum capital requirement (MCR)

ii. Pillar II or supervisory review process (SRP)

iii. Pillar III or market discipline (MD)

2.3.1 Pillar I or minimum capital requirement (MCR)

Pillar I or MCR states that banks are required to maintain regulatory capital that is 8% of risk-weighted assets (RWA). The RWA refer to the total assets of the bank that are risk-adjusted or weighted against credit risk, market risk, and operational risk according to the risk grade. Bank assets consist of cash, investment in securities, loans to governments, and businesses individuals that bear different risk characteristics. Therefore, risk weight is assigned to this asset group to indicate the level of riskiness in each asset group. To calculate the capital requirement, it takes into account both the on-balance sheet and off-balance sheet items of the bank.

Eligible regulatory capital is constituent of core capital or **Tier 1 capital** and supplementary capital or **Tier 2 capital**. Pillar I states the maintenance of regulatory capital on these two types. Core capital is the equity capital of the bank, retained earnings, and other reserves. For supervisory purposes, the committee determined to present the capital of the bank in two groups Tier 1 and Tier 2 where Tier 1 or the core capital should not be less than 50% of the total capital base of the bank that consists of common equity and approved reserves from the retained earnings. Other elements of the capital will have to be grouped in Tier 2 that is limited to 100% of the core capital or Tier 1 capital. Tier 2 includes the following:

- Undisclosed reserve or unpublished reserves
- Revaluation reserve of certain assets
- General provision/general loan-loss reserves
- Hybrid debt capital instrument
- Subordinated term debt

Short-term subordinated debt covering market risk or **Tier 3 capital**. Even though the eligible regulatory capital consists of core capital and supplementary capital, to cover the market risk, bank at its discretion can build Tier 3 capital that consists of short-term subordinated debt. This Tier 3 capital base can be built to support solely the market risk and cannot be higher than 250% of the core capital or Tier 1 capital.

The items to be deducted from the capital base are goodwill (deduction from Tier 1 capital), increase in equity due to securitization exposure, and investment in subsidiaries performing in the banking and financial sector that is not included in the national system.

Minimum capital requirement (MCR) is calculated for credit risk, market risk, and operational risk. BCBS advises that the minimum capital requirement under Basel II must be 8%, which will be calculated as follows:

$$\text{CAR} = \frac{\textit{Tier}\ 1 + \textit{Tier}\ 2 - \textit{Deductions} + \textit{Tier}3}{\textit{Cr risk RWA} + \textit{Oper risk RWA} + \textit{Mkt risk RWA}} \geq 8\% \qquad (1)$$

where CAR is the capital adequacy ratio, Tier 1 is the Tier 1 capital, Tier 2 is the Tier 2 capital, Tier 3 is the Tier 3 capital, Cr risk RWA is the risk-weighted asset for credit risk, Oper risk RWA is the risk-weighted asset for operational risk, and Mkt risk RWA is the risk-weighted asset for market risk.

The following sections present a brief discussion on calculation of capital requirements for these risk areas, i.e., credit risk, operational risk, and market risk.

2.3.1.1 Credit risk

Risk-weighted asset for credit risk is calculated for credit RWA for exposure in banking book except the counterparty credit risk arising from equity investment, securitization exposure, and trading book instruments. Bank can choose either standardized approach (SA) or internal ratings-based approach (IRBA) to calculate their capital requirement against credit risk. In standard approach the risk is measured by the support of external rating or credit assessments whereas internal rating based approach is conducted by banks internal rating system and subject to the approval of the supervisors [5].

In case of standardized approach, claims against different counterparties are risk weighted against their rating. This credit rating is assessed by external credit rating institutions. In case of absence of any credit rating, the banks are advised to follow the instruction by the regulatory authorities. National regulatory or supervisory authorities permit the eligibility of the external credit assessment institution upon fulfillment of certain conditions. The credit rating agency must fulfill six criteria: objectivity, independence, international access/transparency, disclosure, resource, and credibility.

BCBS advises risk weight for claims on sovereigns, non-central government public sector entities, multilateral development banks, banks, securities firms, corporates, included in the regulatory retail portfolios, secured by residential property, commercial real estate, past due loans, and off-balance sheet items. A higher credit score signifies lower risk weight in calculating the risk-weighted asset of the bank. In standardized approach, bank calculates the total risk-weighted asset of the bank taking into consideration the whole credit portfolio. Along with the regular claims, the unsecured loans that are past due for more than 90 days are also risk weighted. This unsecured portion of the loan is risk weighted after the net of specific provision.

In standardized approach, the off-balance sheet items are converted into credit exposure equivalents through the use of credit conversion factors (CCF). The original maturity time determines the CCF of different commitments in the off-balance sheet items.

Internal ratings-based approach (IRB) as its name implies relies on own estimates of risk measurement in determining the capital requirement against credit risk, which are subject to fulfillment of certain conditions as well as disclosure requirements by the regulatory authorities. In IRB, the risk management team identifies the probability of default (PD), loss given default (LGD), the exposure at default (EAD), and effective maturity (M). Through these risk components, banks measure the unexpected loss (UL) and expected loss (EL). The capital requirements are calculated on the basis of unexpected loss. Expected losses are treated separately [5].

2.3.1.2 Operational risk

BCBS defines operational risk as "the risk of loss resulting from inadequate or failed internal processes, people, and systems or from external events." It includes the legal risk and excludes strategic and reputational risk. The committee advises three measurement approaches to calculate the capital charge against the operational risk of the bank. The approaches are (i) the basic indicator approach (BIA), (ii) standardized approach (SA), and (iii) advanced measurement approach (AMA).

Banks are encouraged to follow the sequential order of the measurement approaches. The level of sophisticated risk measurement system and practice would decide to follow the later approaches, i.e., standardized approach and advanced measurement approach. Internationally active banks with significant risk exposure

in the operational areas are permitted to follow the standardized or advanced measurement approach.

In basic indicator approach, the capital charge for operational risk is equal to the 15% of average positive annual gross income of the bank. Gross income is the total of net interest income and net non-interest income. It does not include any realized profit or loss from the sale of securities and any income derived from insurance. The calculation of capital charge in basic indicator approach is as follows:

$$K_{BIA} = [\Sigma(GI_{1...n} \times \boldsymbol{\alpha})]/n \quad (2)$$

Here K_{BIA} is the capital charge in basic indicator approach; GI is the gross income, which was positive, over the previous 3 years; n is the number of previous 3 years for which gross income is positive; and α is 15% required capital level against the operational risk.

In standardized approach, a bank's activities are divided into eight sectors: corporate finance, trading and sales, retail banking, commercial banking, payment and settlement, agency services, asset management, and retail brokerage. In standardized approach, for every sector separate gross income is calculated separately. To measure the capital charge, this sectoral gross income is multiplied by denoted beta (a factor). Beta is a proxy variable that denotes relationship between the operational risk (of loss) for the particular business sector and aggregate level of gross income for that business sector [5]. Unlike basic indicator approach, standardized approach measures capital charge for each business line separately.

In SA, capital charge is calculated by taking the 3 years average of simple summation of the regulatory capital charge for each of the business sectors. Any negative capital charge due to negative gross income for any business sector may offset the positive capital charge in other business sector without limit. If the aggregate capital charge across all business lines in a certain time period is negative, then the numerator will be considered as zero. BCBS expressed the equation as follows:

$$K_{SA} = \left\{\Sigma_{\text{Years } 1-3} \max\left[\Sigma(GI_{1-8} \text{ X } \beta_{1-8}), 0\right]\right\}/3 \quad (3)$$

where K_{SA} is the capital charge under the standardized approach; GI_{1-8} is the annual gross income in a given year, for each of the eight business sectors; and β_{1-8} is a fixed percentage, set by the BCBS, the level of required capital to the level of the gross income for each of the eight business sectors.

Table 1 presents the value of β for each business sector as prescribed by BCBS [5] as follows.

Sl. no.	Business sector	Value of β (%)
1	Corporate finance	18
2	Trading and sales	18
3	Retail banking	12
4	Commercial banking	15
5	Payment and settlement	18
6	Agency services	15
7	Asset management	12
8	Retail brokerage	12

Table 1.
Value of β for different business sectors.

In advanced measurement approach, banks use some qualitative and quantitative criteria to calculate the risk exposure and capital charge by their own. This approach requires complex modeling and is subject to the approval of the supervisory authority.

2.3.1.3 Market risk

BCBC defines market risk as "the risk of losses in on- and off-balance sheet positions arising from movements in market prices." Sources of market risk are interest rate risk, foreign exchange risk, and commodities risk [5]. Interest risk arises from the loss due to movement of interest rate. Foreign exchange risk arises from changes in banks' assets and liability due to the fluctuation of foreign exchange rate. In the case of cross-border investments, when banks invest in different currencies risk arises due to adverse changes in the exchange rate. Similarly, commodity risk arises from the uncertain future market price changes in commodity prices.

Market risk is measured using the standardized measurement method and value at risk (VaR) or internal model approach. The choice of method is subject to the permission of the regulatory authorities. In standardized measurement method, four risks are addressed which are interest rate, equity position, foreign exchange, and commodities risk. The practice of internal model approach is subject to compliance of certain conditions and approval of the supervisory authorities.

Therefore, bank's total minimum capital requirement will be the summation of the capital requirement against the credit risk, capital charge for operational risk, and capital charge for market risk of the bank.

2.3.2 Pillar II or supervisory review process (SRP)

Pillar II or supervisory review process intends to assure that the bank has sufficient capital to support different risks arising in the business operation as well as encourage developing and practicing better risk management technique. SRP concedes the bank management to set capital target through developing an Internal Capital Assessment Process (ICAAP) that commensurate with banks own risk profile [5]. It also ensures that the bank management bears the responsibility to maintain the adequate level of capital beyond the minimum level to support its risk. The committee identifies the appropriate relationship between the risk and amount of capital and the effectiveness of bank's internal control and risk management process. The role of supervisory authority is to evaluate how the operating banks are assessing their risk and capital requirement and intervene if necessary. SRP intends to intervene the bank regulators to prevent capital shortfall from the minimum level in the early stage and to take rapid corrective action [5]. The SRP takes into account other risk factors that are not considered in Pillar I (i.e., liquidity risk and interest risk). The regulatory authority evaluates the bank's assessment of capital, ability to monitor, and be compliant with the capital regulations.

2.3.3 Pillar III or market discipline

Pillar III promotes market discipline through a set of qualitative and quantitative disclosure requirements that allow the market participants to understand the scope of application, capital position, risk exposure, and assessment of the banks. It is complement to Pillars I and II. Therefore, the disclosure allows a bank to present its risk position that is based on a common and consistent framework to the regulatory authority as well as public for comparison and credibility.

Bank supervisors having their power to disclose requirements to the operating banks contribute to safe and sound banking practices. Banks will have a formal disclosure policy approved by the board of directors, which exhibits the items to be disclosed, frequency, and internal control over the process. These capital and risk disclosure requirements do not conflict with and minimize the scope of the accounting requirements.

2.4 Basel III

Global economy suffers severe financial distress during 2007–2008. Excess liquidity in the banking sector resulting in too much weak credit or loans to subprime borrowers is at the top of the list behind the crisis of 2007–2008. Other reasons that triggered the global crisis are excessive risk taken by the financial firms, excess leverage, lack of adequate quality capital, inadequate liquidity buffer, and excess dependence on the credit rating agency [6]. The crisis revealed the lapses in the regulatory framework, market transparency, and supervision quality [7]. The crisis of 2007–2008 exposed the shortcomings of Basel II in managing the systematic risk and revealed the moral hazard problem linked with the systematically important banks.

In response to the crisis, BCBS addressing the weaknesses proposed revised capital framework that enforces raising higher quality of capital. It suggests building more common equity to improve loss absorption capacity and maintaining two liquidity standards and leverage ratio. The purpose of the regulation is to increase the level and quality of capital, enhance risk capture, constrain bank leverage, improve bank liquidity, and limit pro-cyclicality. In 2017, the committee reforms Basel III 2010 that seeks the credibility in risk calculation and improvement in comparison on the capital position of the bank [8].

The minimum amount of common equity to be maintained is increased from 2 to 4.5% and capital conservation buffer of 2.5% of the risk-weighted assets of the bank. In addition, the regulatory authority can enforce additional capital buffer during the period of excess credit growth. For systemically important banks, additional loss absorbency capacity can be introduced [7]. In 2017 reform, the committee has brought some changes in calculating credit risk through detailed risk weighing rather than flat risk weight for loans against residential and commercial real estate. In addition, banks are advised to perform due diligence in case of relying on external credit ratings.

To make the banking industry more stable, building capital alone is not sufficient. Therefore, to protect against buildup of excessive balance sheet leverage, Basel III introduced non-risk-based leverage ratio. This non-risk-based leverage ratio is Tier 1 capital to average total restated balance sheet assets over the quarter. The leverage ratio should be minimum 3%.

Moreover, for better resilience, (a) liquidity coverage ratio (LCR) for short-term disruption and (b) net stable funding ratio (NSFR) for long-term liquidity mismatch in the balance sheet are introduced. LCR is a standard for a minimum level of liquidity where the institution can generate enough cash outflow from the high-quality liquid assets in any short-term distress situation. The LCR standard is measured by the ratio of stock of high liquid assets to total net cash outflows over the next 30 calendar days. However, NSFR measures the sustainable funding ratio relating to the assets and off-balance sheet activities [9]. NSFR is the ratio of the available amount of stable funding to the required amount of stable funding, which should be greater than 100%. It suggests the banks to rely on long-term liabilities over short-term liabilities and small and retail liabilities over wholesome liabilities in case of short-term maturity (less than 1 year) for better resilience.

Particulars	Minimum % of RWA
Common equity	4.5
Capital conservation buffer	2.5
Tier 1 capital	6
Total capital	8
Liquidity coverage ratio	≥100
Net stable funding ratio	≥100

Table 2.
Minimum capital requirement ratio.

The crisis also revealed that the existing regulation has not appropriately covered major on- and off-balance sheet items, trading book, and derivative-related risk exposure. BCBS advises a revised framework to address the trading book exposure under Basel III that increases the capital charges around three to four times of previous level. Basel III upholds the counterparty credit risk management and collateral risk management and addresses the pro-cyclicality effect and credit valuation adjustment risk to reduce the reliance on external credit rating agencies. **Table 2** presents the present capital ratio and liquidity ratio advised by the committee [10].

2.4.1 Capital conservation buffer and countercyclical buffer

The case of Lehman Brothers and AIG call attention to how a single firm can boost up shock in the financial market as well as in the global economy. The financial crisis of 2007–2008 has revealed that microprudential guideline alone is not sufficient to address the systematic risk. Macroprudential regulation that takes into account the risk arising from interconnectedness of the financial institutions is important to respond to the systematic risk and financial stability in the economy.

Therefore, the macroprudential guidelines impose additional capital requirement for systematically important banks to reduce their default probability. BCBS advises building common equity of 2.5% of risk-weighted asset as capital conservation buffer so that in times of distress, this buffer can be scaled down to absorb losses. BCBS also advises the regulatory authorities to raise an additional countercyclical capital buffer of 2.5% to respond with excessive credit growth that may induce systematic risk in the financial sector. Banks incur a huge loss during downturn followed by a long excessive aggregate credit growth. After the asset price bubbles loans go unpaid, prices go down, banks loan decrease, and level of defaults even increases more [11]. To prevent this systematic risk, banks are advised to build additional capital up to 2.5% during the credit growth time that ensures the sufficient level of capital during the distress periods. It ensures that during the downturn, the banking institution has enough cushions to absorb the additional loss and provisioning. It also intends to support the financial stability by building countercyclical capital buffer during boom period through increasing to the cost of credit which reduces the demand for it [12].

3. Islamic banking and capital regulation

BCBS provides capital standard for conventional banks but Islamic banks are also under the same jurisdiction toward a safe and sound banking system. Islamic banks differ from the conventional banks in their operation due to

unique items in the liability side of the balance sheet, risk sharing with the depositor and investor, absence of interest, and so on. Moreover, Islamic banks cannot access some credit derivatives to mitigate risk like conventional banks because of governing by the Shariah Principle. Wide range of financing mode also poses Islamic banking to face different kinds of risk. Since the operation of Islamic banking differs from the conventional banking, the determination of capital requirements also differs [13]. Studies find BCBS capital regulation does not address the risk of Islamic bank and lacks the goal to minimize the level of risk faced by the Islamic banks. Furthermore, it contributes to increase the risk of Islamic banks [14].

The Islamic Financial Services Board (IFSB) is an international organization that provides prudential guidelines and standards for the Islamic banks, insurance (takaful), and capital markets to enhance the stability of the Islamic financial industry. IFSB provides the standards aligning with the global regulatory standards in calculating capital requirements, thereby making disclosure toward transparency and market discipline [12]. However, because of asset-based financing, profit-loss sharing, profit bearing, or loss sharing principle, the capital determination is different from the conventional banking institution. Like the BCBS, IFSB also advises countercyclical capital buffer to the Islamic banks to reduce the systematic risk during the period of excessive credit growth.

4. Empirical studies on capital regulation and bank risk

The relationship between bank capital level and risk management is the most studied issue after the capital regulation regime. The empirical evidence provides useful insights about the factors affecting the risk undertaking of the banks. However, the studies focusing on the relationship between capital, risk management, and performance found contrasting results. Several studies found, in effect, that capital regulation stimulates the banks to take excessive risk through allowing the banks to increase riskier investment with the increase of bank capital [6]. Regulatory restriction, lower rate of return, riskier portfolio, and deposit insurance are the major causes identified behind the positive association between risk and capital regulations [15, 16]. Building capital raises cost of capital, decreases expected profit and rate of return, and induces the bank to invest in riskier sector that is more riskier in the long run [16]. Conversely, strict regulation, income diversity, and bank size are the factors identified behind the negative relationship between capital regulation and bank risk [17–20]. However, studies also find that capital regulation has different impact on conventional and Islamic banks.

5. Conclusion

Bank regulations and supervisions are to make the financial system more resilient that facilitate the stakeholders, creditors, depositors, and different counterparties. It prevents banks to take excessive risk. Therefore, to increase the financial stability around the world, BCBS a committee of BIS provides prudential guidelines for the banks and other financial institutions. The committee has advised three capital accords: Basel I, Basel II, and Basel III. Basel III is addressed to mitigate the regulatory lapses and systematic risk faced by the banks during recent financial crisis of 2007–2008.

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